

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
1 July 2004 (01.07.2004)

PCT

(10) International Publication Number  
WO 2004/054764 A3

(51) International Patent Classification<sup>7</sup>:

B26D 7/18

(21) International Application Number:

PCT/NL2003/000863

(22) International Filing Date: 4 December 2003 (04.12.2003)

(25) Filing Language:

Dutch

(26) Publication Language:

English

(30) Priority Data:

1022122 10 December 2002 (10.12.2002) NL

(71) Applicant (for all designated States except US): FICO B.V. [NL/NL]; Ratio 6, NL-6921 RW Duiven (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): RENSEN, Marcel, Hermanus, Johannes [NL/NL]; Kasteelstraat 38, NL-7447 AX Hellendoorn (NL). VAN EGMOND, Henri, Joseph [NL/NL]; Wilsondreef 1, NL-6716 DN Ede (NL). VAN DALEN, Adrianus, Wilhelmus [NL/NL]; Zwanenveld 25-09, NL-6538 NG Nijmegen (NL).

(74) Agents: VAN DEN HEUVEL, Henricus, Theodorus et al.; Patentwerk B.V., P.O. Box 1514, NL-5200 BN 's-Hertogenbosch (NL).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

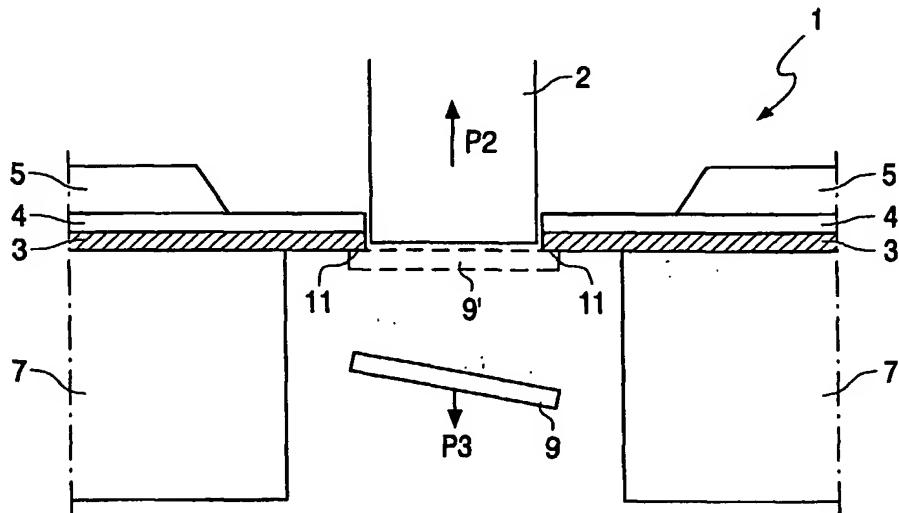
Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:  
19 August 2004

[Continued on next page]

(54) Title: METHOD FOR RELEASING SLUG AFTER PUNCHING, AND PUNCHING METHOD THEREFOR



WO 2004/054764 A3

(57) Abstract: The invention relates to a method for releasing slug (9, 15, 25) adhering to a stamp (2, 24) in a punching machine, by carrying the stamp (2, 24), after performing a punching operation on a sheet material (4), with the active stroke at least partially through a cutting opening (6) in a cutting plate (3, 13, 21) supporting the sheet material (4), and carrying the stamp (2, 24) during the return stroke back again through the cutting opening (6) in the cutting plate (3, 13, 21) which close-fittingly encloses the stamp (2, 24). The invention also relates to a punching machine (1, 12, 17, 22) for releasing slug (9, 15, 25) adhering to a stamp (2, 24) according this method.



*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## INTERNATIONAL SEARCH REPORT

PCT/NL 03/00863

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 B26D7/18

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B26D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 066 932 A (UHT CORP) 10 January 2001 (2001-01-10)  paragraphs '0002! - '0004!, '0009! - '0015!, '0032!; figure 8 -----	1,3-10, 12-14, 16,17
X	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 03, 30 March 2000 (2000-03-30) & JP 11 333791 A (NGK SPARK PLUG CO LTD), 7 December 1999 (1999-12-07) abstract ----- -/-	1,8

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

## \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the International filing date
- \*L\* document which may throw doubts on priority, claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the International filing date but later than the priority date claimed

- \*T\* later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed Invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed Invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*&\* document member of the same patent family

Date of the actual completion of the International search

2 July 2004

Date of mailing of the International search report

12/07/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Rabolini, M

## INTERNATIONAL SEARCH REPORT

PCT/NL 03/00863

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PATENT ABSTRACTS OF JAPAN vol. 1995, no. 08, 29 September 1995 (1995-09-29) & JP 07 132497 A (KATAYAMA NUKIGATA SEISAKUSHO:KK), 23 May 1995 (1995-05-23) abstract -----	1,8
A	DE 41 03 339 A (NAUMANN SPEZIALWERKZEUG GMBH) 3 September 1992 (1992-09-03) -----	

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

PCT/NL 03/00863

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
EP 1066932	A 10-01-2001	JP EP	2001009794 A 1066932 A2	16-01-2001 10-01-2001
JP 11333791	A 07-12-1999		NONE	
JP 07132497	A 23-05-1995		NONE	
DE 4103339	A 03-09-1992	DE	4103339 A1	03-09-1992